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## CLAIMS

We claim:

1. An isolated oligonucleotide comprising at least 12 consecutive nucleotides of a nucleic acid sequence selected from the group of consisting of: SEQ ID NO: 1, SEQ ID NO: 2; SEQ ID NO:3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID  
10 NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; SEQ ID NO: 10; SEQ ID NO: 11; SEQ ID NO: 12; SEQ ID NO: 13; SEQ ID NO: 14; SEQ ID NO: 15; SEQ ID NO: 16; SEQ ID NO: 17; SEQ ID NO: 18; SEQ ID NO: 19; SEQ ID NO: 20; SEQ ID NO: 21; SEQ ID NO: 22; SEQ ID NO: 23; SEQ ID NO: 24; SEQ ID NO: 25; SEQ ID NO: 26; SEQ ID NO: 27; SEQ ID NO: 28; SEQ ID NO: 29; SEQ ID NO: 30; SEQ  
15 ID NO: 31; SEQ ID NO: 32; SEQ ID NO: 33; SEQ ID NO: 34; SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 38; SEQ ID NO: 39; SEQ ID NO: 40; SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51; SEQ ID NO: 52; and SEQ ID NO: 53; wherein the oligonucleotide is  
20 capable of binding selectively to DNA indicating fluoroquinolone resistance in *Bacillus anthracis*.
2. The oligonucleotide of Claim 1 immobilized on a solid surface.
3. The oligonucleotide of Claim 1, further comprising an observable marker.
- 25 4. The oligonucleotide of Claim 3, wherein the observable marker is a fluorescent label.
5. The oligonucleotide of Claim 3, wherein the observable marker is a radioactive group.

5           6.       The oligonucleotide of Claim 1, wherein the fluoroquinoline is ciprofloxacin.

          7.       A pair of oligonucleotide primers selected from the group of oligonucleotide pairs consisting of: SEQ ID NO: 1 and SEQ ID NO: 2; SEQ ID NO: 3 and SEQ ID NO: 4; SEQ ID NO: 5 and SEQ ID NO: 6; SEQ ID NO: 7 and SEQ ID NO: 8; SEQ ID NO: 9 and SEQ ID NO: 10; SEQ ID NO: 11 and SEQ ID NO: 12; SEQ ID NO: 13 and SEQ ID NO: 14; SEQ ID NO: 15 and SEQ ID NO: 16; SEQ ID NO: 17 and SEQ ID NO: 18; SEQ ID NO: 19 and SEQ ID NO: 20; SEQ ID NO: 21 and SEQ ID NO: 22; SEQ ID NO: 23 and SEQ ID NO: 24; SEQ ID NO: 25 and SEQ ID NO: 26; SEQ ID NO: 27 and SEQ ID NO: 28; SEQ ID NO: 29 and SEQ ID NO: 30; SEQ ID NO: 31 and SEQ ID NO: 32; SEQ ID NO: 33 and SEQ ID NO: 34; SEQ ID NO: 35 and SEQ ID NO: 36; SEQ ID NO: 37 and SEQ ID NO: 38; and SEQ ID NO: 39 and SEQ ID NO: 40; wherein the pair of oligonucleotide primers is capable of binding selectively to DNA indicating fluoroquinoline resistance in *Bacillus anthracis*.

20           8.       The pair of oligonucleotides in Claim 7, wherein the fluoroquinoline is ciprofloxacin.

          9.       An oligonucleotide primer selected from the group consisting of: SEQ ID NO: 41; SEQ ID NO: 42; SEQ ID NO: 43; SEQ ID NO: 44; SEQ ID NO: 45; SEQ ID NO: 46; SEQ ID NO: 47; SEQ ID NO: 48; SEQ ID NO: 49; SEQ ID NO: 50; SEQ ID NO: 51, SEQ ID NO: 52; and SEQ ID NO: 53, wherein the primer is capable of detecting a single nucleotide polymorphism, wherein the single nucleotide polymorphism is characteristic of fluoroquinoline resistance in *Bacillus anthracis*.

          10.      The oligonucleotide primer of Claim 9, wherein the primer comprises a polynucleotide tail capable of producing a customized amplicon length.

5           11.     A method for detecting fluoroquinolone resistance in *Bacillus anthracis* comprise the steps of:

i. providing a DNA sample from a *Bacillus anthracis*;

ii. providing one or more primer pairs from Claim 7;

iii. amplifying said DNA with said primer pair; and

10           iv. comparing a result of said amplification step with a result of amplification of a known fluoroquinolone resistant *Bacillus anthracis* with said primer pair.

12.     The method of Claim 11, wherein said amplification step further comprises multiplexing.

13.     A method for detecting fluoroquinolone resistance in *Bacillus anthracis*  
15     comprising the steps of:

i. providing a DNA sample from *Bacillus anthracis*;

ii. providing one or more oligonucleotides from Claim 1;

iii. combining said oligonucleotide and said DNA under conditions whereby said oligonucleotide binds to said DNA; and

20           iv. detecting the presence or absence of bound oligonucleotide, wherein the presence of bound oligonucleotide indicates fluoroquinolone resistance in *B. anthracis*.

14.     The method of claim 13, wherein said oligonucleotide comprises an observable marker.

25           15.     The method of Claim 14, wherein said observable marker is a fluorescent or radioactive group.

16.     A method for detecting a fluoroquinolone resistance in *Bacillus anthracis* comprising the steps of:

i. providing a DNA sample from a *Bacillus anthracis*;

30           ii. providing one or more primer pairs from Claim 7;

iii. providing one or more primers from Claim 9; and

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- iv. amplifying said DNA with said primer pairs and said primer;
- v. comparing the results of said amplification step with results of amplification of a known fluoroquinolone resistant *B. anthracis* with said primers.

17. A kit for the molecular detection of fluoroquinolone resistance in  
10 *Bacillus anthracis* strain by amplification of DNA, said kit comprising:  
one or more oligonucleotide primers from Claim 1, wherein the  
oligonucleotide primer is capable of indicating fluoroquinolone resistance in  
*Bacillus anthracis*.

18. The kit of Claim 17 further comprising dNTPs, taq polymerase, salts  
15 and buffers suitable for causing amplification of said DNA in a PCR instrument.

19. The kit of Claim 18 wherein said dNTPs are labeled with a fluorescent  
or radioactive group.

20. A kit for molecular detection of fluoroquinolone resistance in *Bacillus*  
*anthracis* by assay of DNA, wherein the DNA is characteristic of a fluoroquinolone  
20 resistance, said kit comprising one or more primers from Claim 9.

21. The kit of Claim 20, wherein said primers are labeled with a  
fluorescent or radioactive group.

22. The kit of Claim 21, further comprising salts and buffers suitable for  
causing binding of said DNA to said primers.

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